Congress of the United States
Washington, DC 20515

May 22, 2023

The Honorable Gina M. Raimondo
Secretary
Department of Commerce
1401 Constitution Avenue, NW
Washington, DC 20230

Dear Secretary Raimondo,

We write you today regarding the Department of Commerce's implementation of the *CHIPS and Science Act* (PL 117-167), specifically regarding the opportunity it provides for research on the use of per- and polyfluoroalkyl substances (PFAS) in the semiconductor manufacturing process.

Exposure to certain PFAS has been linked to adverse health effects in humans, including increased risks of some cancers, decreased immune response, changes in liver function, and developmental effects in children. Additionally, PFAS contamination is widespread throughout the United States, impacting water, air, and soil. Water and air effluent discharges from PFAS manufacturers and users, including the semiconductor manufacturing industry, have exacerbated this problem. This has imposed high costs on the health and environment.

Over decades of use, PFAS have been widely integrated into our modern society and in many cases, there are not currently any viable replacements for their function. These "essential uses" are vital to our economic and national security, particularly in regard to their use in semiconductor manufacturing. PFAS are used in the photolithography process, in photoresists as photoacid generators, and developer and rinse solutions. The use of these chemicals has become an integral part of the modern semiconductor manufacturing process, and alternatives that work at scale are not yet available or adopted by the industry.

We are committed to working with this Administration to support strict regulations that reduce the potential harms of PFAS. The U.S. Environmental Protection Agency (EPA) recently proposed drinking water standards for six PFAS and to designate PFOA and PFOS as hazardous substances under the *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA). EPA has also taken the first-ever federal *Clean Water Act* enforcement action to address PFAS discharges from a West Virginia Chemours facility. Multiple States have passed laws restricting the use of PFAS, several bills have been introduced in both Congressional chambers, and the European Union is

working on stringent regulations. Meanwhile, 3M announced that they will no longer produce any PFAS by the end of 2025. However, as we begin to remove PFAS from usage and clean up legacy contamination, we must also recognize the problem of eliminating chemical supplies that are currently critical to defense and manufacturing. In our roles on Defense Appropriations Subcommittees in our respective chambers, we are acutely aware of the impact that this could have on our national security. The defense and semiconductor industries have indicated that this represents a major threat to manufacturing and reliability. Protecting health, safety, and the environment is incredibly important. However, the green energy transition, as well as our national and economic security, rely on many of these technologies that use small amounts of PFAS. This supply chain and PFAS essential uses problem needs to be addressed as we move toward the ultimate goal of a PFAS-free future.

The *CHIPS and Science Act* provides a unique opportunity for the Commerce Department to engage and invest in tackling the issue of PFAS essential uses. This monumental legislation has set the U.S. on a course to onshore semiconductor manufacturing and continue to lead the world in advanced technology development and production. We were proud to vote for this bill, and are pleased with the positive effects it has had so far. One of the main features of this bill is the creation of the National Semiconductor Technology Center (NSTC), which will advance innovation in the semiconductor space as part of a public-private partnership with industry. As the priorities are being set for the NSTC, it is vitally important that these priorities include research into PFAS alternatives, as well as recycling, removal, and destruction of these harmful chemicals.

Given this context, we request that you provide detailed answers to the following questions:

1. What is the Department's plan for investing in PFAS alternatives research?
    a. Has the Department considered establishing a public-private partnership (PPP) to invest in PFAS alternatives research with the semiconductor industry?
    b. Has the Department considered the benefits of establishing a targeted PPP, focused on PFAS alternatives research, and funding it at a consistent amount for 5 – 10 years, given the importance of consistent funding to the success of PPPs?
2. Has the Department considered including incentives to move away from PFAS as part of future Notice of Funding Opportunities (NOFO)? For example, these could include language that looks favorably upon applications that include proposals for projects that do not include PFAS-related chemicals going forward, and those that invest in R&D on PFAS alternatives.
3. What are the Department's plans to consider environmental effects when reviewing and approving applications for funds under the CHIPS Act?
    a. Will the CHIPS Program Office consider environmental precautions against PFAS releases in its NOFO review process? If not, who will be responsible?

b. Is the Department exploring hazardous chemical reuse and recycling, including PFAS, in its conversations with industry and as it works to establish the NSTC?

4. How does the Department plan to work with industry to ensure that new fabs are adhering to strict effluent standards, including monitoring for and removing PFAS?
5. How is the Department working with other federal agencies to accelerate semiconductor fab permitting, while also maintaining high environmental standards?

Thank you for your attention to this important matter. Please provide an update on the answer to these questions within 60 days.

Sincerely,

Betty McCollum
Member of Congress

Richard J. Durbin
United States Senator

Cc:
The Honorable Dr. Laurie E. Locascio, Under Secretary of Commerce for Standards and Technology, Director of the National Institute of Standards and Technology.
The Honorable Michael Schmidt, Director of the CHIPS Program Office, U.S. Department of Commerce.